

IN THE CLAIMS

This listing of claims replaces all prior listings and versions of the claims in the present application.

Listing of Claims:

Claim 1 (Currently Amended): A mounting method of a magnetic head component, comprising ~~the steps of:~~

providing a magnetic head slider or a precise positioning actuator with a magnetic head slider, and a suspension so as to form an exposed corner or juncture therebetween; and electrically and mechanically connecting said magnetic head slider or said precise positioning actuator to said suspension, by performing molten-solder connections at the corner or juncture by using solder balls exposed at the corner or juncture with cores that will not melt even at a solder-melting temperature,

wherein said connecting of the magnetic head slider comprises performing said molten solder by laser reflowing applied to said exposed solder balls.

Claim 2 (Currently Amended): The method as claimed in claim 1, wherein the connecting step of the magnetic head slider comprises placing each of said solder balls to contact at least one of a terminal pad formed on said magnetic head slider or on said precise positioning actuator and a connection pad formed on a lead conductor member supported by said suspension, and thereafter performing said molten-solder connections.

Claim 3 (Currently Amended): The method as claimed in claim 1, wherein said connecting step of the magnetic head slider comprises performing said molten solder by laser reflowing applied to said exposed solder balls.

Claim 4 (Currently Amended): The method as claimed in claim 1, wherein said providing step of the magnetic head or actuator comprises providing solder balls with cores, each core having a surface layer that is in contact with solder, and wherein at least said surface layer of each core is made of a conductive material.

Claim 5 (Original): The method as claimed in claim 4, wherein said conductive material contains at least copper.

Claims 6-7 (Canceled).

Claim 8 (Currently Amended): The method as claimed in claim 1, wherein said providing step comprises providing solder balls comprise solder balls with cores, each core having a surface layer and an inside body, and wherein said surface layer of each core is made of a conductive material and said inside body of each core is made of a resin material.

Claim 9 (Original): The method as claimed in claim 8, wherein said conductive material contains at least copper.

Claim 10 (Currently Amended): The method as claimed in claim 1, wherein said providing step comprises providing solder balls comprise solder balls with cores, each core having a surface layer that is in contact with solder, and wherein at least said surface layer of each core is made of a material with a high solder wettability and a high thermal conductivity.

Claim 11 (Currently Amended): The method as claimed in claim 1, wherein said ~~providing step comprises providing~~ solder balls comprise solder balls with cores, each core constituting 30-70% of the whole of each solder ball by volume.

Claim 12 (Currently Amended): The method as claimed in claim 1, wherein said ~~providing step comprises providing~~ solder balls comprise solder balls with cores, and wherein each core has a diameter smaller than a ~~longitudinal direction length~~ portion of each terminal pad formed on said magnetic head slider or on said precise positioning actuator.

Claim 13 (Currently Amended): The method as claimed in claim 1, wherein said method further comprises ~~a step of~~ mechanically fixing said magnetic head slider to said suspension, by performing molten-solder connections between dummy terminal pads formed on said magnetic head slider and dummy pads formed on said suspension using solder balls with cores that will not melt even at a solder-melting temperature.

Claim 14 (Currently Amended): The method as claimed in claim 13, wherein said fixing ~~step of~~ said magnetic head slider comprises grounding said dummy terminal pads.

Claim 15 (Currently Amended): A magnetic head device comprising:
a magnetic head slider with at least one magnetic head element and terminal pads electrically connected to said at least one magnetic head element; and
a suspension with connection pads electrically connected to said terminal pads and forming an exposed corner or juncture therebetween,
said terminal pads and said connection pads being electrically connected with each other by molten-solder connections exposed at the corner or juncture using solder balls with

cores that will not melt even at a solder-melting temperature, said molten solder connections being formed by laser reflowing applied thereto.

Claim 16 (Original): The magnetic head device as claimed in claim 15, wherein said device further comprises a precise positioning actuator connected to said suspension by molten-solder connections using solder balls with cores that will not melt even at a solder-melting temperature.

Claim 17 (Currently Amended): The magnetic head device as claimed in claim 15, wherein said magnetic head slider has dummy terminal pads on [[its]] a first surface thereof and said suspension has dummy pads, and wherein said dummy terminal pads and said dummy pads are electrically connected with each other by molten-solder connections using solder balls with cores that will not melt even at a solder-melting temperature.

Claim 18 (Currently Amended): The magnetic head device as claimed in claim 17, wherein said dummy terminal pads [[are]] comprise grounded pads.

Claim 19 (Currently Amended): The magnetic head device as claimed in claim 17, wherein said dummy terminal pads are formed on a second surface of said magnetic head slider, which is located at a position opposite to said first surface.

Claim 20 (Original): The magnetic head device as claimed in claim 15, wherein each core has a surface layer that is in contact with solder, and wherein at least said surface layer of each core is made of a conductive material.

Claim 21 (Original): The magnetic head device as claimed in claim 20, wherein said conductive material contains at least copper.

Claims 22-23 (Canceled).

Claim 24 (Original): The magnetic head device as claimed in claim 15, wherein each core has a surface layer and an inside body, and wherein said surface layer of each core is made of a conductive material and said inside body of each core is made of a resin material.

Claim 25 (Original): The magnetic head device as claimed in claim 24, wherein said conductive material contains at least copper.

Claim 26 (Original): The magnetic head device as claimed in claim 15, wherein each core has a surface layer that is in contact with solder, and wherein at least said surface layer of each core is made of a material with a high solder wettability and a high thermal conductivity.

Claim 27 (Original): The magnetic head device as claimed in claim 15, wherein each core constitutes 30-70% of the whole of each solder ball by volume.

Claim 28 (Currently Amended): The magnetic head device as claimed in claim 15, wherein said each core has a diameter smaller than a longitudinal direction length portion of each terminal pad of said magnetic head slider.

Claim 29 (Currently Amended): A manufacturing method of a magnetic head device, comprising the steps of:

placing a magnetic head slider with at least one magnetic head element and terminal pads electrically connected to said at least one magnetic head element on a suspension with connection pads so as to form an exposed corner or juncture therebetween; and

electrically connecting said terminal pads of said magnetic head slider to said connection pads of said suspension, by performing molten-solder connections at the corner or juncture by using solder balls exposed at the corner or juncture with cores that will not melt even at a solder-melting temperature,

wherein said connecting of the magnetic head slider comprises performing said molten solder by laser reflowing applied to said exposed solder balls.

Claim 30 (Currently Amended): The manufacturing method as claimed in claim 29, ~~wherein said method which~~ further comprises a step of testing characteristics of said magnetic head device after performing the molten-solder connections so as to judge whether the magnetic head device is defective, and a step of reworking the magnetic head device when it is judged as defective.

Claim 31 (Currently Amended): The manufacturing method as claimed in claim 29, ~~wherein said method which~~ further comprises a step of testing characteristics of said magnetic head device before performing molten-solder connections where said solder balls are tentatively attached between said terminal pads and said connection pads so as to judge whether the magnetic head device is defective, and a step of performing the molten-solder connections when [[it]] the magnetic head device is judged as not being defective and

performing rework of the magnetic head device when [[it]] the magnetic head device is judged as being defective.